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STATEMENT OF BASIS FOR AREA OF CONCERN 503 CNC CHARLESTON SC
9/3/2013
RESOLUTION CONSULTANTS

STATEMENT OF BASIS

Charleston Naval Complex Installation Restoration Program Charleston, South Carolina

Facility: Charleston Naval Complex

Unit Type: AOC 503

Contaminants: None

Media: Surface Water, Sediments

Proposed Remedy: No Further Action (NFA)

INTRODUCTION

The purpose of this Statement of Basis (SB) is to present the decision for Area of Concern (AOC) 503, which is No Further Action (NFA), and to invite public comment on this proposed decision. This SB provides AOC 503 background information and explains the reasons why NFA is proposed. See Figure 1 for a facility location map.

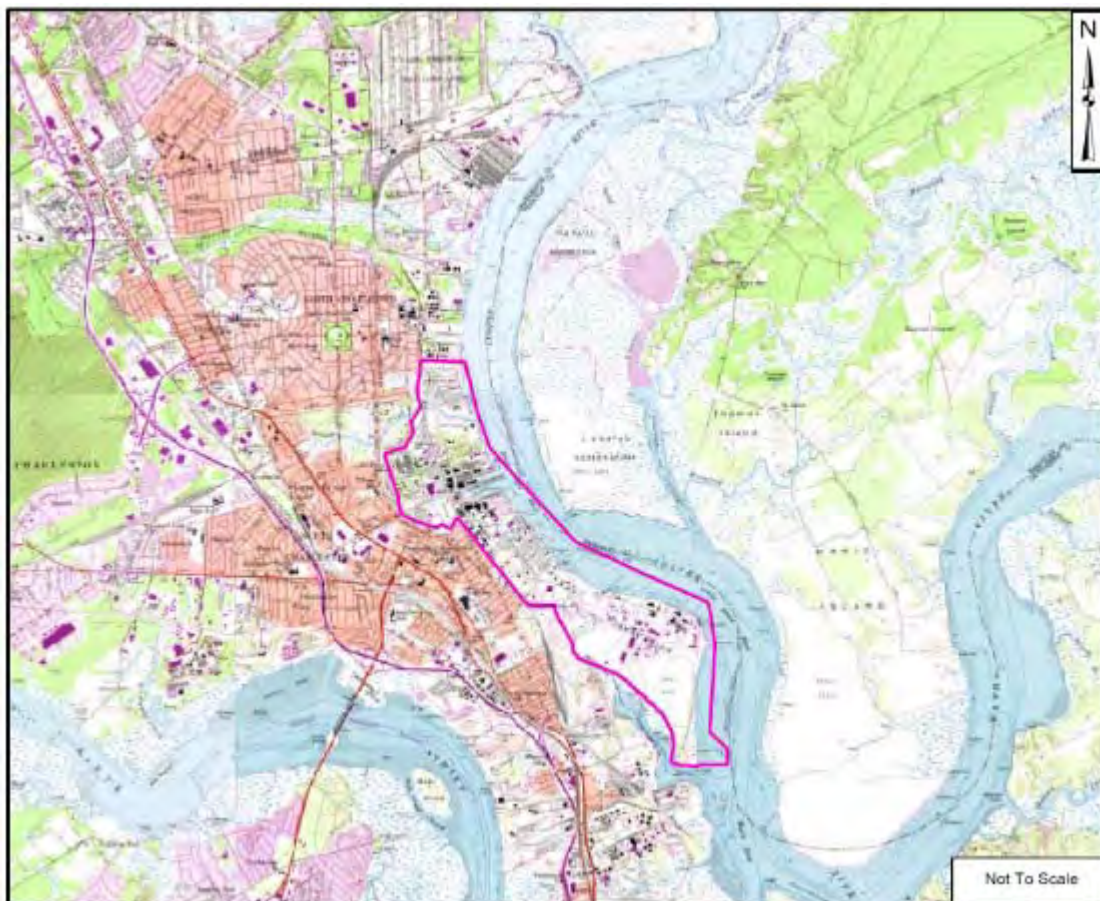


Figure 1 – Charleston Naval Complex, Charleston, South Carolina

Charleston Naval Complex (CNC) is located on the western bank of the Cooper River in Charleston Harbor at the confluence of the Ashley, Cooper, and Wando Rivers and their tributaries. CNC consists of 12 investigative zones (Zones A through L) for Resource

Conservation and Recovery Act (RCRA) corrective action processes. AOC 503, located within Zone H, is one of two unexploded ordnance (UXO) sites located at CNC.

This SB presents the proposed remedy that NFA is required for AOC 503. A site location map for AOC 503 is provided as Figure 2.

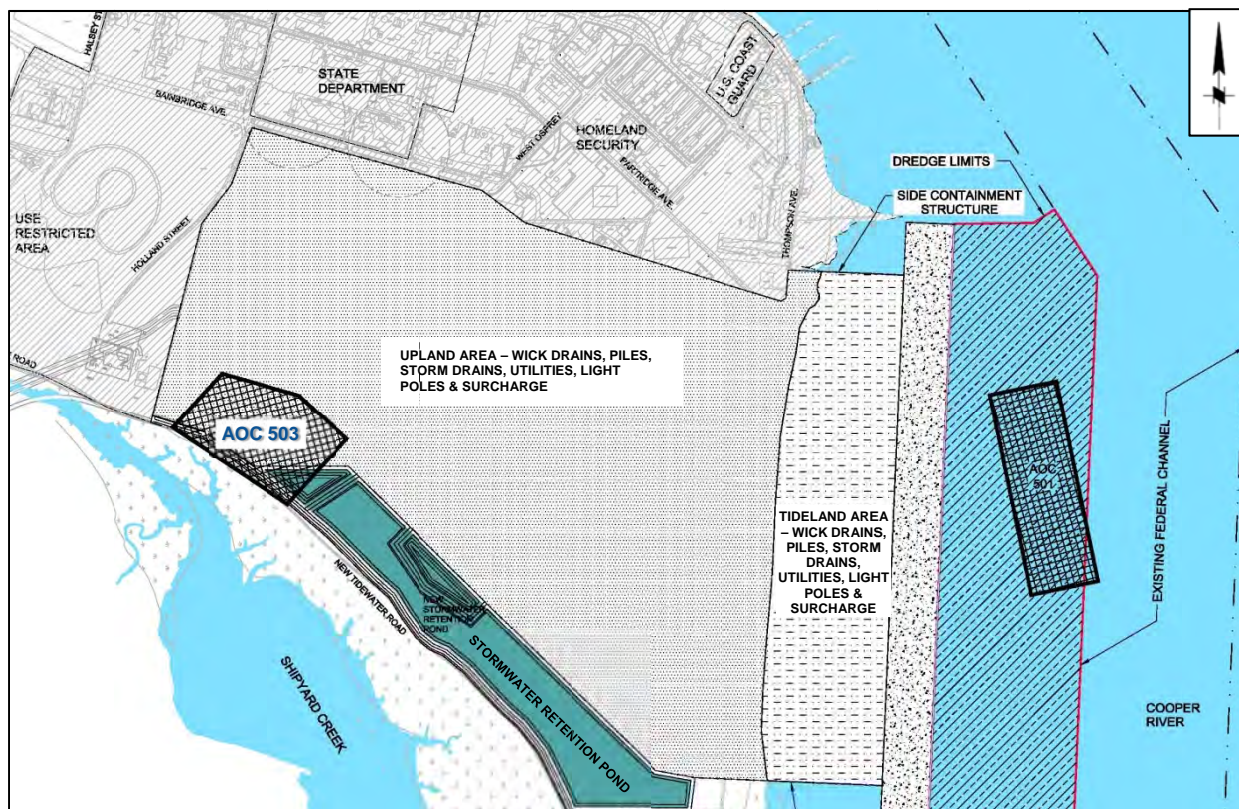


Figure 2 – AOC 503 Site Location Map

The CNC and South Carolina Department of Health and Environmental Control (SCDHEC) jointly developed the specific site remedy described herein and are issuing this SB as part of their public participation responsibilities under Section 7004(b) of the RCRA Title 42, United States Code Section 6974(b), and applicable state law. This document is intended to inform the general public of the proposed remedy for this site. SCDHEC will not approve the proposed remedy until the 45-day public comment period has ended and all information submitted during the public comment period has been reviewed and considered. SCDHEC may modify the proposed corrective action or select another action based on new information or public comments received on this proposal. Therefore, the public is invited to review and comment on all alternatives, including any potential corrective measures that were not previously considered.

The information summarized in this SB can be found in greater detail in documents contained in the Information Repository for this facility. This SB does not replace those documents. Historical documents can be found in the administrative record at Base Realignment and Closure Program Management Office (BRAC PMO) located in Charleston, SC and the SCDHEC office located in Columbia, South Carolina (addresses provided at the conclusion of this document). SCDHEC encourages the public to review these documents in order to gain a more thorough understanding of the site and the activities that have been conducted.

PROPOSED REMEDIES

The recommended alternative for AOC 503 is NFA. This remedy was selected by SCDHEC in the July 2, 2013 approval letter for the *Recommendation for Discontinuation of Annual Inspection of LUCs at AOC 503*. Because the remedy of NFA has already been selected and approved by SCDHEC, there is no further discussion included herein concerning the terms of the decision criteria. As a result, there is no "Evaluation of Alternatives" section included in this SB.

SITE BACKGROUND

This AOC is included in Appendix B-8 of the US Navy's Resource Conservation and Recovery Act (RCRA) Permit Renewal Application, which designates this AOC as requiring land use controls (LUCs) such as fencing, soil caps, building slabs, and legal obligations that restrict the land's use and allowable activities. The LUCs are implemented to prevent adverse human health or environmental impacts associated with potential exposure to UXO at the site.

AOC 503 was first identified as a single-point map location indicating where two AN-Mark-17 (Mk-17) depth bombs were jettisoned from a seaplane into the Cooper River on October 8, 1943. The convention of identifying this incident on the station map continued from 1945 until the 1990s. Development of Mk-17 depth bombs preceded the Mk-47. The Mk-17 was typically loaded with Trinitrotoluene (TNT) only.

AOC 503 consists of 9.85 acres located at the southern boundary of Zone H. The size of the area was developed from an analysis conducted by the Naval Explosive Ordnance Disposal Technology Division (NAVEODTECHDIV), located in Indian Head, Maryland, to encompass an area which would include possible points where the jettisoned bombs would have landed given the possible inaccuracies of the map coordinates. Prior to construction of a detention pond circa 2007, the site was a wooded, marshy area bounded on the south by Shipyard Creek and on the North by Buildings 655, the former base commissary, and 665, the former base package store. Currently, a 25-acre detention pond is located southeast of AOC 503, which covers the southernmost portion of AOC 503 (Figure 2).

PREVIOUS INVESTIGATIONS

AOC 503 was initially investigated during the Interim Measure (IM) activities conducted following closure of the Charleston Naval Base in accordance with 1993 Base Realignment and Closure (BRAC) recommendations. The primary objective of the IM activities conducted at AOC 503 was to locate, excavate, and remove identified anomalies, UXO, and associated contaminated soil. If UXO was not detected and recovered, a secondary objective of the IM activities at the site was to perform a due diligence search and verify via a geophysical survey whether the UXO had been previously removed, or was located several feet below the river bottom, and allow for an unrestricted release of the property.

The RCRA Facility Investigation (RFI) for Zone H (which includes AOC 503) was completed by Ensafe/Allen & Hoshall in July 1996. The RFI activities are presented in *Final RCRA Facility Investigation Report* (Ensafe/Allen & Hoshall, 1997). Following issuance of the Final RCRA Facility Investigation (RFI) for Zone H, NAVEODTECHDIV expanded the search area for the depth bombs to include the configuration of the old seaplane runway present at the time and include additional areas where the jettisoned bombs may have landed.

NAVEODTECHDIV performed the search activities in 1997 using an Automated Ferrous Ordnance Locator and a magnetometer. NAVEODTECHDIV's initial search estimated that the sediment in the marsh during the period the bombs were jettisoned was less than 6 feet thick. Periodic dredging of nearby Shipyard Creek resulted in an additional 6 to 8 feet of sediment

being deposited in the area of AOC 503 after 1943. Based on the suspected depth bomb trajectories and subsequent emplacement of dredged river bottom materials, NAVEODTECHDIV concluded that the depth bombs would most likely be located within 14 feet of the ground surface; however, NAVEODTECHDIV concluded that at that depth, the magnetic signature of an Mk-17 depth bomb would be very difficult to detect using a magnetometer.

A total of nine anomalies at AOC 503 were initially identified by NAVEODTECHDIV and marked for excavation and retrieval. The excavated anomalies consisted of various pieces of sheet metal, metallic fragments, lengths of metal pipe, a corroded metal handle, and other metallic debris. An independent third party, UXB International, Inc. (UXB), was directed by SPORTENVDETHASN to evaluate the geophysical data, and UXB recommended performance of another geophysical survey over the same area. The resurvey was completed by NAVEODTECHDIV, and the new data eliminated two identified anomalies from further consideration as potential Mk-17 depth bomb locations. Following completion of the resurvey in June 1997, SPORTENVDETHASN determined that no potential UXO existed within 15 feet below the surface at AOC 503. The IM Completion Report for AOC 503 confirmed this by concluding that SPORTENVDETHASN had met the intent of performing a due diligent search and verifying via geophysical survey that the ordnance was either previously removed or located at a safe distance below the ground surface of the property.

As previously stated, a 25-acre detention pond was built southeast of AOC 503 during previous construction activities completed by the State Ports Authority. Precautions were taken to avoid the potential UXO items. The pond was initially excavated to an elevation of 6' Charleston Low Water (CLW). The area was then scanned with a magnetometer. After the scan, the pond was excavated two feet deeper. A second scan was performed, and the final two feet of the pond was excavated to a final elevation of 2' CLW. Vertical wick drains (wicks) were installed in the remaining portion of AOC 503, outside the pond footprint. The wicks were driven on five foot centers from the ground surface to the top of the Cooper Marl geologic formation (also known as the Cooper Group), approximately 70' below land surface. UXO was not encountered during this process.

SUMMARY OF SITE RISKS

Prior to excavation, construction activities in the area of AOC 503 had the potential to disturb and/or expose any UXO in this area. However, risks previously associated with this site are believed to have been eliminated and/or significantly reduced due to the excavation completed during construction activities.

The two Mk-17 depth bombs jettisoned at AOC 503 reported in 1943 may have been armed (although probably fused); however, the standard operating procedure for a jettison event was to release the ordnance in such a manner that the arming wires were retained in the fuse, which maintains the munitions in a relatively safe, unarmed, and less sensitive condition. As a result, detonation of the depth bombs at AOC 503 would only be expected to occur if the main charge explosives were to function as a result of sufficient shock and/or high heat. Based on available information concerning the design and function of the Mk-17 depth bomb, the main charge explosive in the Mk-17 was TNT. Furthermore, bomb fillers were, by design, relatively insensitive in order to safely withstand rough handling during typical military operations.

Potential ecological risks attributed to the October 1943 munitions event are not expected to be a concern at AOC 503.

SCOPE OF CORRECTIVE ACTION

NFA is appropriate and technically warranted for AOC 503.

ANTICIPATED IMPACTS OF CLEANUP ON THE LOCAL COMMUNITY

No significant impacts or exposure to the local community are anticipated with the proposed NFA at AOC 503.

STATUTORY AUTHORITIES

This document is being issued in accordance with 40 Code of Federal Regulations (CFR), in compliance with federal hazardous waste management requirements. The Charleston Naval Complex Corrective Action Program is conducted under the authority of Sections 3004(u), 3004(v), 3005(c)(3), 3008(h), 3013, 6001, and 7003 of the RCRA (42 U.S.C. 6901 et seq.) as amended by the Hazardous & Solid Waste Amendment of 1984 (HSWA) (Pub. L. No. 98-616, 98 Stat. 3221) and the Federal Facility Compliance Act of 1992 (FFCA) (Pub. L. 102-386, 106 Stat. 1505). This SB is part of the corrective action process and is a requirement of Hazardous Waste Permit No. SC0 170 022 560, issued to Charleston Naval Complex by SCDHEC.

PUBLIC PARTICIPATION

The final remedy selected for the site will be based on community acceptance. Public participation and comments are vital to a thorough evaluation. Documents generated following site investigation and remediation activities are available for public review.

A 45-day public comment period will be held (dates to be determined) during which time written comments will be accepted from the public. A public hearing will be held at public request. If a hearing has been requested, information regarding the date, time, and location will be published in the *Post & Courier* newspaper.

Contact information is listed below for submission of comments regarding this Statement of Basis, request for public hearing, or for review of available documentation.

Mr. David Criswell
Restoration Program Manager
Navy BRAC Program Management Office SE
4130 Faber Place Drive Suite 202
North Charleston, SC 29405
(843) 743-2130
Between the hours of 8:30 AM and 4:30 PM

or

Ms. Meredith Amick
Bureau of Land and Waste Management
Division of Waste Management
South Carolina Department of Health and Environmental Control
2600 Bull Street
Columbia, SC 29201
(803) 898-0368
Between the hours of 8:30 AM and 4:30 PM

REFERENCES

ADVENT/Shaw (ADVENT Environmental, Inc., and Shaw Environmental, Inc.), 2007. *Final UXO Risk Assessment and Mitigation Measures Report for Sites AOC 501 and 503 at the Former Charleston Naval Complex.*

EnSafe/Allen & Hoshall, 1997. *Final RCRA Facility Investigation Report for Zone H Addendum.*

SCDHEC, 2013. *Recommendation for Discontinuation of Annual Inspection of Land Use Controls for AOC 503.*

SPORTENVDETHASN (Supervisor of Shipbuilding, Conversion and Repair, Portsmouth Va., Environmental Detachment Charleston), 1997. *Interim Measures Completion Report for AOC 503.*

Department of the Navy, 1997. *Completion Report – Interim Measure for AOC 503.*